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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| EXAMINER |
|---|
| SHINGLES, KRISTIE D |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2141 | |

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

X1

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/447,400 | CHEN ET AL. |
| | Examiner | Art Unit |
| | Kristie Shingles | 2141 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _04 February 2005_.

2a)☒ This action is **FINAL**.          2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-14_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-14_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _12 November 2002_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:.

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)                4) ☐ Interview Summary (PTO-413)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)        Paper No(s)/Mail Date. _____.
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)   5) ☐ Notice of Informal Patent Application (PTO-152)
   Paper No(s)/Mail Date _____.                        6) ☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)                Office Action Summary                Part of Paper No./Mail Date 20050504

## DETAILED ACTION

### *Response to Amendment*

*Applicant has amended claims 1 - 4.*

*Claims 1-14 are still pending.*

### *Response to Arguments*

1.      Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 112*

2.      The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3.      Claims *8 and 9* are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims *8 and 9* recite the limitations "said combination" in line 3 of each claim. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

4.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.      Claims **1-10** are rejected under 35 U.S.C. 102(e) as being anticipated by *Jindal et al*

(USPN 6,327,622).

a.          **Per claim 2**, *Jindal et al* teach the In a communication system network having a

plurality of servers, each of said plurality of servers having a load level based on serving a

number of clients in said communication system network, a method comprising the steps of:

- grouping said plurality of servers into a plurality of server groups G0 through G2, wherein said server groups G0 through G2 respectively have load levels progressively from a least amount of load level to a most amount of load level (col.9 line 48-col.10 line 40; server groups according to load balancing policies);

- calculating a time periods T1 and T2, wherein said time period T2 is longer than time period T1 (col.2 lines 40-67, col.4 lines 57-67, col.6 lines 35-64, col.8 lines 1-7 & 47-54 and col.9 lines 14-27; fastest response times are calculated among the servers and preferred servers are identified periodically);

- assigning load to a server selected from a group of servers comprising said server group G0 from an initial time until expiration of said time period T1 (col.4 lines 57-67, col.6 lines 35-64 and col.9 lines 14-27; the chosen preferred server is identified on a regular or periodic basis);

- determining another group of servers comprising said group of servers that includes said server group G0 and further comprising said server group G1 (col.8 line 55-col.10 line 40; server groupings in server farm); and

- assigning load to a server selected from said another group of servers after expiration of said time period T1 (col.4 lines 57-67, col.6 lines 35-64, col.8 lines 1-7 & 47-54 and col.9 lines14-47);

- determining yet another group of servers comprising said group of servers that includes said another group of servers and further comprising said server group G2 (col.8 line 4-col.10 line 40; server groupings in server farm and implementation of load-balancing policies carried out on a periodic basis,

whereas the preferred server may change or be updated based on its load, functionality and operability); and

- assigning load to a server selected from said yet another group of servers after expiration of said time period T2 (col.4 lines 57-67 and col.8 line 4-col.10 line 40; server groupings in server farm and implementation of load-balancing policies carried out on a periodic basis, whereas the preferred server may change or be updated based on its load, functionality and operability—load assignment in the server farm may be based on the global and local policies implemented on the segregated, local, remote and intermediate servers).

b.      **Claims 1, 3 and 4** contain limitations that are substantially similar to claim 2 and are therefore rejected under the same basis.

c.      **Per claim 5,** *Jindal et al* teach the method as recited in claim 4 wherein said plurality of time periods T1 through Tk each is based on a difference between load levels of at least two server groups in said plurality of server groups G0 through Gk (col.4 lines 57-67 and col.9 lines 14-col.10 line 57).

d.      **Per claim 6,** *Jindal et al* teach the method as recited in claim 4 further comprising the steps of: receiving an update of load level of at least one of said plurality of servers in said plurality of server groups G0 through Gk; repeating said grouping to produce a new plurality of server groups G0 through Gk based on said update of load level; repeating said calculating said plurality of time periods to produce a new plurality of time periods T1 through Tk corresponding to said new plurality of server groups G0 through Gk; resetting said initial time to a reset initial time, and assigning load to a server selected from servers in said new server group G0 from said reset initial time until expiration of said new time period T1; assigning load, after expiration of each of said new time periods T1 through Tk measured from said reset initial time, to a server selected from servers in  a combination of servers including said new server group G0 and at least one other server group, in said new server groups G1 through Gk, corresponding to an

expiring time period (col.2 lines 40-67, col.5 lines 25-44, col.6 lines 35-63, col.9 line 27-col.11

line 45, col.12 line 13-col.13 line 29 and col.14 lines 1-32).

      e.      **Per claim 7,** *Jindal et al* teach the method as recited in claim 4 wherein said

groupings of said plurality of server groups G0 through Gk is based on similarity of load level

among said plurality of servers (col.2 lines 40-67, col.5 lines 25-44, col.6 lines 35-64, col.7 lines

38-67, col.8 lines 55-67 and col.10 lines 13-40).

      f.      **Per claim 8,** *Jindal et al* teach the method as recited in claim 4 wherein at least

one load assignment in said assigning load to a server in said server group G0 and said assigning

load to a server selected from servers in said combination is performed according to a round

robin selection method (col.1 lines 41-48 and col.2 lines 17-28).

      g.      **Per claim 9,** *Jindal et al* teach the method as recited in claim 4 wherein at least

one load assignment in said assigning load to a server in said server group G0 and said assigning

load to a server selected from servers in said combination is performed according to a random

selection method (col.2 lines 17-28).

      h.      **Per claim 10,** *Jindal et al* teach the method as recited in claim 4, wherein each of

said plurality of time periods T1 through Tk is based on load levels of at least two server groups

selected from said plurality of server groups G0 through Gk, a request arrival rate and a server

service rate (col.9 lines 14-27, col.10 line 25-col.11 line 15).

### *Claim Rejections - 35 USC § 103*

6.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.      Claims **11-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Jindal et al* (USPN 6,327,622) in view of *Couland et al* (USPN 6,253,230).

a.      **Per claim 11**, *Jindal et al* teach the method of claim 10 as applied above, yet fail to explicitly teach the method wherein said request arrival rate is substituted for an average request arrival rate of said plurality of servers. However, *Couland et al* disclose calculating an average of the throughput to/from a server as an indicator of the load level of the servers (**col.6 lines 5-31**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Jindal et al* and *Couland et al* for the purpose of permitting conduction of various types of calculations (including averages) and analyses of the servers' collected data in order to determine the load capabilities; because the average rate would serve as an overall indicator of the load levels the servers are experiencing and the performance trends that servers are capable of handling.

b.      **Claims 12-14** are substantially similar to claim 11 and are therefore rejected under the same basis.

### *Conclusion*

8.      The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

      a.    *Choquier et al* (USPN 5,774,668) disclose a system for on-line service in which gateway computers user service maps, which includes load conditions of servers broadcasted by application servers for load balancing.

      b.    *Ballard* (USPN 6,078,960) discloses client-side load-balancing in a client-server network.

9.    Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10.    Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Kristie Shingles*
*Examiner*
*Art Unit 2141*

*kds*

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER